

#17

SEQUENCE LISTING

<110> Rudnicki, Michael A.  
Sabourin, Luc A.

<120> A Caspase Activated Protein Kinase

<130> 12536-2

<140> US 09/926,036

<141> 2000-02-18

<150> US 60/120,784

<151> 1999-02-19

<160> 11

<170> PatentIn version 3.1

<210> 1

<211> 5257

<212> DNA

<213> Mus musculus

<400> 1  
gaattccggg ctttttattg ttcctagccc tttaaggga aggggctctg ctgggcttgg 60  
aaaaatgtcc ttcttcaatt tccgtaagat cttcaagttg gggagcgaga agaagaagaa 120  
acagtacgaa cacgtgaaga gagacctgaa ccccgagag ttttgggaga ttattggaga 180  
actgggagac ggagccttcg ggaaagtcta taaggccag aataaagaga ccaatgtttt 240  
agctgctgca aaggtgattg acaccaaac tgaagaagag cttgaagatt atatggttga 300

gattgacata	ttagcatctt	gtgatcacc	aaacatcgtc	aagcttctag	atgccttcta	360
ttacgagaac	aacctttgga	tcctcattga	attctgtgca	gggggagcag	tggatgctgt	420
gatgcttgaa	cttgagagac	cattaactga	atcccaaata	caagtagtct	gcaagcagac	480
attagaggca	ttgaattact	tacatgacaa	taaaatcata	caccgagata	taaaagctgg	540
caatattctc	tttaccttag	atggagacat	taaattagcg	gattttggag	tatcagctaa	600
aaataccagg	acaattcaaa	ggagggattc	atttattggc	acaccatatt	ggatggctcc	660
tgaagtagtc	atgtgtgaga	catcaaagga	cagaccttat	gactacaaag	ctgatgtttg	720
gtccctgggt	attactttta	tagaaatggc	tgagatagag	ccacctcata	atgagttaaa	780
tccaatgcgc	gtgctgctga	aaattgcaaa	atctgagccc	ccaacattag	cacagccata	840
aaaatgggtc	tcaaatttta	aggactttct	aaggaaatgc	ttggaaaaga	atgtggatgc	900
gcggtggacc	acgtctcagc	tggtgcagca	tccttttggt	accgttgatt	ccaacaaacc	960
agtccgagag	ttgattgctg	aggcaaaggc	tgaagtaaca	gaagaagttg	aagatggcaa	1020
ggaagaagat	gaggaggagg	aagcagagaa	tgctctgcca	atacctgcaa	ataaacgtgc	1080
ctcctctgac	ctcagcattg	ccagctctga	agaagataaa	ctttcacaaa	atgcttgtat	1140
tttggaatct	gtgtcagaaa	gaacagaaca	aagtacttct	gaggataaat	ttagcaacaa	1200
aattcttaat	gagaaaccta	cgactgacgg	tcctgagaag	gctgtggatg	agcatgcaag	1260
tgatgtgaac	ttagaaactg	gggctgaact	aatgaccaa	acagtaggaa	tccatgagaa	1320
tgggagagag	aagaaaagac	ccaagctgga	aatctgcca	gatacacaa	accagcaaac	1380
tgtggatgtt	aattcagtca	gtgaagaaaa	tgagaataat	agagtaactt	tagaaacgaa	1440
cactgattgt	ctgaaaccag	aggaagacag	aaataaagaa	aaccaagaga	cacttgagag	1500
taaacttata	caatctgaag	aaattaatga	cacacataat	caaacaatgg	acttagtttc	1560
tcaagagact	ggagaaaaag	aagcagattt	tcaggcagtt	gacaatgaag	ttgggcttac	1620
aaaggaagaa	accaagaga	aattaggaaa	agatggtaca	gctcaaaaag	ttataaccag	1680
tgatagaagc	agtgaggtgg	ggacagacga	ggctctagat	gacactcaga	aggctgctga	1740
gctcagtaag	gcagcacaga	gtggggaagg	ggacgaagcc	ctggcgcta	cccagacact	1800
agcagagaag	cccacagagg	gccctgaggc	cggtggggct	gaggaagagc	ctcctggtgg	1860
agagagagtt	gaggataaac	agccagagca	gcagcctgca	gtgtgtgaag	ctgagggaca	1920
gttaaccagc	acgtcagaga	ccacacgggc	aaccctggag	caaccggaga	cggatgaagt	1980
tgagcaggtc	agcgagtcca	atagcattga	ggagctagag	agacttgtag	ttactggtgc	2040
tgaggcacgg	ctctcgggag	tgaagggtgag	gcagctgcta	ctgaggtaga	tttggagaga	2100
aaagaaaacg	cacagaaagt	gcccgttaaa	gcagagtccc	aagctcctgc	agcatcgag	2160
cccagcgagc	ctcacctgt	cttaataccc	agtattaata	ttaattctga	aaccacagaa	2220

aataaagaag	aaatgggtgc	tttgccaaaa	cctgaaacca	tactgccacc	agagcctgaa	2280
catgaaaagg	gaaatgacac	cgactcaggg	actgggtcca	ctgtggagaa	tagcagtggg	2340
gacctgaact	tgtccatctc	tagcttccta	agcaaagcta	aggacagcgg	ctcagtgtct	2400
ctgcaggaga	caagaagaca	gaagaaaaca	ttgaagaaaa	cacgcaagtt	tattgtcgat	2460
ggtgtagaag	tgagtgtgac	gacatcgaag	atagttacag	acagcgactc	caaaacggag	2520
gaactgcgct	ttctcaggcg	tcaggaactt	cgggagctga	ggcttcttca	gaaggaggag	2580
cagcgagccc	agcagcagct	caatgggaaa	ctgcagcagc	agcgggagca	gatcttcagg	2640
cgctttgagc	aggagatgct	gagtaagaag	cgacaatatg	accaagaaat	tgagaattta	2700
gagaagcagc	agaaacagac	aattgaacgg	ctagaacaag	agcactacta	ccgcctgaga	2760
gacgaagcca	agcgcatcaa	aggagagcag	gagaaggagc	tgtccaagtt	ccagaatgtg	2820
ctgaaaaacc	gcaagaagga	ggaacaagaa	tttgttcaga	agcaacaaca	agagttagat	2880
ggttctctga	aaaagattat	ccagcagcag	aaggcagagt	tggccaatat	tgagagagaa	2940
tgctgaata	acaagcagca	gctcatgaga	gctcgagaag	ccgcaatttg	ggagcttgaa	3000
gagcgacatt	tacaagagaa	gcaccagctg	cttaaacagc	agcttaaaga	tcagtatttc	3060
atgcagagac	atcagctgct	aaaacgccat	gagaaggaaa	cagaacaaat	gcagcgctac	3120
aatcaacgac	ttattgaaga	actgaaaaac	agacagactc	aggaacgagc	gagactgccc	3180
aagattcaaa	gaagtgaagc	caagacacga	atggccatgt	ttaaaaaaag	tttgaggatc	3240
aactcaacag	ccacaccaga	ccaggaccgt	gaaaaaatta	aacagtttgc	tgcacaagaa	3300
gaaaagagac	agaaaaatga	gagaatggct	cagcatcaaa	aacatgagag	ccaaatgcgg	3360
gatcttcagt	tgcagtgtga	agccaatgtt	cgggaactgc	accagctgca	gaatgaaaaa	3420
tgccacctgt	tggttgaaca	tgagactcag	aagctgaagg	agttggatga	ggagcacagc	3480
caagagctga	aggagtggag	agagaagctg	agaccagga	agaagacact	ggaagaagag	3540
tttgccagga	aactgcagga	acaggaagtg	ttctttaaaa	tgactgggga	gtccgaatgt	3600
cttaatccat	cagcacagag	ccgatctct	aaattctacc	ctattccac	cttacattcc	3660
actgggtcat	agcaacagca	agtgtcctca	tctggatttg	gcttctaagt	acatcattgt	3720
attctcttca	tcttcacag	tatgtatgac	tacaaagaca	atcacctgct	tcattctctt	3780
ggtggtttta	aaaatttctt	tcttgaattt	tattgttaaa	caaagatgaa	gggcagacga	3840
actaagacag	atgctcggcc	atgttgggtga	cgtagcatct	cgtggtaatt	ccctaagggtg	3900
attttgtata	ttgaccttaa	atattgtatt	ctttagacac	tgttattgaa	aactgccaga	3960
gacataatgt	ttaaagttat	ttggaaaata	tatctgttac	atcactaagt	attaataaat	4020
attgttttac	ctgatttctc	aatgatgcta	aattctatag	aaaggactct	gctatagaat	4080

tgggataatt ttcttttggt aaccaactct tactttttaa aagccatgag ttagagaata 4140  
 cgttattgat tcagtacata gatataat tttt tactactaaa caggatcaaa atctttttaa 4200  
 agagaaaagt tattttcaata atttgctgca aacattagcc tgtgtgggta ggagctaat 4260  
 attaaggtgc taattttatt aagatagtgc ctaaaacact aaatttttaa catatgtaaa 4320  
 atggggcctt ccttttggtc atgaggaaca aagtccctt ctcactgaca tcaactgttt 4380  
 aaaaacttgc ttatattacc attccgtaga aaattacatc ctaaaacaga tgggtgtacaa 4440  
 agcctgggaa gatgggagaa ctggctttaa catgtgagtt ggtgagcccc tttactctct 4500  
 gagagatgcc cacagctcag ggagttctgc catcacccag agctcagccc tgagctgcag 4560  
 tcacggctac agttctgaag ctagtctcag cagtgtttgt ccacaatgga ttttctttca 4620  
 tatcagacac acaccaagg tgacactggg ttgtttccaa tgaggttatt caagtgcatt 4680  
 ttgggttttat ttatttccat gtttaaatta attactttgg gtaggaaaag cctgaagtct 4740  
 ctatcatgtg gttactggta catgtgattt tgatgaaatg ttcactctta gttccttttg 4800  
 aagttcagaa tctcagccac atgtcaggtc aacagtgtta gaaacagcac atttgtaa 4860  
 gatgctcact gcctgccatt ggcaacctgt tctcttctaa gagtgctggg taccaaattg 4920  
 ttaccagtat ttagttatat ttgaggttg gtgaaaagta gtgtaatgtg ggagcaggag 4980  
 ttcattgtaag aaccgtagat gtctgtagag ctttctggcc gtttgtttga aactttggat 5040  
 gctgagctct atctggttag atggttttaa aatgcatgtg taattttaat ttataatta 5100  
 ttttggcaag cataattttt tctggacaac cttgtaggta gccttaactt ttagccaact 5160  
 ttgtttttta tataaatata tataaatata tacatatata atgtatgggt gtaaattcat 5220  
 acacttatca catgatgtgt tactatatac agaattc 5257

<210> 2

<211> 1202

<212> PRT

<213> Mus musculus

<400> 2

Met Ser Phe Phe Asn Phe Arg Lys Ile Phe Lys Leu Gly Ser Glu Lys  
 1 5 10 15

Lys Lys Lys Gln Tyr Glu His Val Lys Arg Asp Leu Asn Pro Glu Glu  
 20 25 30

Phe Trp Glu Ile Ile Gly Glu Leu Gly Asp Gly Ala Phe Gly Lys Val  
 35 40 45

Tyr Lys Ala Gln Asn Lys Glu Thr Asn Val Leu Ala Ala Ala Lys Val  
50 55 60

Ile Asp Thr Lys Ser Glu Glu Glu Leu Glu Asp Tyr Met Val Glu Ile  
65 70 75 80

Asp Ile Leu Ala Ser Cys Asp His Pro Asn Ile Val Lys Leu Leu Asp  
85 90 95

Ala Phe Tyr Tyr Glu Asn Asn Leu Trp Ile Leu Ile Glu Phe Cys Ala  
100 105 110

Gly Gly Ala Val Asp Ala Val Met Leu Glu Leu Glu Arg Pro Leu Thr  
115 120 125

Glu Ser Gln Ile Gln Val Val Cys Lys Gln Thr Leu Glu Ala Leu Asn  
130 135 140

Tyr Leu His Asp Asn Lys Ile Ile His Arg Asp Leu Lys Ala Gly Asn  
145 150 155 160

Ile Leu Phe Thr Leu Asp Gly Asp Ile Lys Leu Ala Asp Phe Gly Val  
165 170 175

Ser Ala Lys Asn Thr Arg Thr Ile Gln Arg Arg Asp Ser Phe Ile Gly  
180 185 190

Thr Pro Tyr Trp Met Ala Pro Glu Val Val Met Cys Glu Thr Ser Lys  
195 200 205

Asp Arg Pro Tyr Asp Tyr Lys Ala Asp Val Trp Ser Leu Gly Ile Thr  
210 215 220

Leu Ile Glu Met Ala Glu Ile Glu Pro Pro His His Glu Leu Asn Pro  
225 230 235 240

Met Arg Val Leu Leu Lys Ile Ala Lys Ser Glu Pro Pro Thr Leu Ala  
245 250 255

Gln Pro Ser Lys Trp Ser Ser Asn Phe Lys Asp Phe Leu Arg Lys Cys  
260 265 270

Leu Glu Lys Asn Val Asp Ala Arg Trp Thr Thr Ser Gln Leu Leu Gln  
275 280 285

His Pro Phe Val Thr Val Asp Ser Asn Lys Pro Val Arg Glu Leu Ile

290		295		300
Ala Glu Ala Lys Ala Glu Val Thr Glu Glu Val Glu Asp Gly Lys Glu				
305		310		315 320
Glu Asp Glu Glu Glu Glu Ala Glu Asn Ala Leu Pro Ile Pro Ala Asn				
		325	330	335
Lys Arg Ala Ser Ser Asp Leu Ser Ile Ala Ser Ser Glu Glu Asp Lys				
		340	345	350
Leu Ser Gln Asn Ala Cys Ile Leu Glu Ser Val Ser Glu Arg Thr Glu				
		355	360	365
Gln Ser Thr Ser Glu Asp Lys Phe Ser Asn Lys Ile Leu Asn Glu Lys				
		370	375	380
Pro Thr Thr Asp Gly Pro Glu Lys Ala Val Asp Glu His Ala Ser Asp				
		385	390	395 400
Val Asn Leu Glu Thr Gly Ala Glu Leu Asn Asp Gln Thr Val Gly Ile				
		405	410	415
His Glu Asn Gly Arg Glu Lys Lys Arg Pro Lys Leu Glu Asn Leu Pro				
		420	425	430
Asp Thr Gln Asp Gln Gln Thr Val Asp Val Asn Ser Val Ser Glu Glu				
		435	440	445
Asn Glu Asn Asn Arg Val Thr Leu Glu Thr Asn Thr Asp Cys Leu Lys				
		450	455	460
Pro Glu Glu Asp Arg Asn Lys Glu Asn Gln Glu Thr Leu Glu Ser Lys				
		465	470	475 480
Leu Ile Gln Ser Glu Glu Ile Asn Asp Thr His Ile Gln Thr Met Asp				
		485	490	495
Leu Val Ser Gln Glu Thr Gly Glu Lys Glu Ala Asp Phe Gln Ala Val				
		500	505	510
Asp Asn Glu Val Gly Leu Thr Lys Glu Glu Thr Gln Glu Lys Leu Gly				
		515	520	525
Lys Asp Gly Thr Ala Gln Lys Val Ile Thr Ser Asp Arg Ser Ser Glu				
		530	535	540

Val	Gly	Thr	Asp	Glu	Ala	Leu	Asp	Asp	Thr	Gln	Lys	Ala	Ala	Glu	Leu	545	550	555	560
Ser	Lys	Ala	Ala	Gln	Ser	Gly	Glu	Gly	Asp	Glu	Ala	Leu	Ala	Pro	Thr	565	570	575	
Gln	Thr	Leu	Ala	Glu	Lys	Pro	Thr	Glu	Gly	Pro	Glu	Ala	Gly	Gly	Ala	580	585	590	
Glu	Glu	Glu	Pro	Pro	Gly	Gly	Glu	Arg	Val	Glu	Asp	Lys	Gln	Pro	Glu	595	600	605	
Gln	Gln	Pro	Ala	Val	Cys	Glu	Ala	Glu	Gly	Gln	Leu	Thr	Ser	Thr	Ser	610	615	620	
Glu	Thr	Thr	Arg	Ala	Thr	Leu	Glu	Gln	Pro	Glu	Thr	Asp	Glu	Val	Glu	625	630	635	640
Gln	Val	Ser	Glu	Ser	Asn	Ser	Ile	Glu	Glu	Leu	Glu	Arg	Leu	Val	Val	645	650	655	
Thr	Gly	Ala	Glu	Ala	Arg	Ala	Leu	Gly	Ser	Glu	Gly	Glu	Ala	Ala	Ala	660	665	670	
Thr	Glu	Val	Asp	Leu	Glu	Arg	Lys	Glu	Asn	Ala	Gln	Lys	Val	Pro	Val	675	680	685	
Lys	Ala	Glu	Ser	Gln	Ala	Pro	Ala	Ala	Ser	Gln	Pro	Ser	Glu	Pro	His	690	695	700	
Pro	Val	Leu	Ile	Pro	Ser	Ile	Asn	Ile	Asn	Ser	Glu	Thr	Thr	Glu	Asn	705	710	715	720
Lys	Glu	Glu	Met	Gly	Ala	Leu	Pro	Lys	Pro	Glu	Thr	Ile	Leu	Pro	Pro	725	730	735	
Glu	Pro	Glu	His	Glu	Lys	Gly	Asn	Asp	Thr	Asp	Ser	Gly	Thr	Gly	Ser	740	745	750	
Thr	Val	Glu	Asn	Ser	Ser	Gly	Asp	Leu	Asn	Leu	Ser	Ile	Ser	Ser	Phe	755	760	765	
Leu	Ser	Lys	Ala	Lys	Asp	Ser	Gly	Ser	Val	Ser	Leu	Gln	Glu	Thr	Arg	770	775	780	
Arg	Gln	Lys	Lys	Thr	Leu	Lys	Lys	Thr	Arg	Lys	Phe	Ile	Val	Asp	Gly	785	790	795	800

Val Glu Val Ser Val Thr Thr Ser Lys Ile Val Thr Asp Ser Asp Ser  
805 810 815

Lys Thr Glu Glu Leu Arg Phe Leu Arg Arg Gln Glu Leu Arg Glu Leu  
820 825 830

Arg Leu Leu Gln Lys Glu Glu Gln Arg Ala Gln Gln Gln Leu Asn Gly  
835 840 845

Lys Leu Gln Gln Gln Arg Glu Gln Ile Phe Arg Arg Phe Glu Gln Glu  
850 855 860

Met Leu Ser Lys Lys Arg Gln Tyr Asp Gln Glu Ile Glu Asn Leu Glu  
865 870 875 880

Lys Gln Gln Lys Gln Thr Ile Glu Arg Leu Glu Gln Glu His Thr Asn  
885 890 895

Arg Leu Arg Asp Glu Ala Lys Arg Ile Lys Gly Glu Gln Glu Lys Glu  
900 905 910

Leu Ser Lys Phe Gln Asn Val Leu Lys Asn Arg Lys Lys Glu Glu Gln  
915 920 925

Glu Phe Val Gln Lys Gln Gln Gln Glu Leu Asp Gly Ser Leu Lys Lys  
930 935 940

Ile Ile Gln Gln Gln Lys Ala Glu Leu Ala Asn Ile Glu Arg Glu Cys  
945 950 955 960

Leu Asn Asn Lys Gln Gln Leu Met Arg Ala Arg Glu Ala Ala Ile Trp  
965 970 975

Glu Leu Glu Glu Arg His Leu Gln Glu Lys His Gln Leu Leu Lys Gln  
980 985 990

Gln Leu Lys Asp Gln Tyr Phe Met Gln Arg His Gln Leu Leu Lys Arg  
995 1000 1005

His Glu Lys Glu Thr Glu Gln Met Gln Arg Tyr Asn Gln Arg Leu  
1010 1015 1020

Ile Glu Glu Leu Lys Asn Arg Gln Thr Gln Glu Arg Ala Arg Leu  
1025 1030 1035

Pro Lys Ile Gln Arg Ser Glu Ala Lys Thr Arg Met Ala Met Phe  
1040 1045 1050



Lys Lys Ser Leu Arg Ile Asn Ser Thr Ala Thr Pro Asp Gln Asp  
1055 1060 1065

Arg Glu Lys Ile Lys Gln Phe Ala Ala Gln Glu Glu Lys Arg Gln  
1070 1075 1080

Lys Asn Glu Arg Met Ala Gln His Gln Lys His Glu Ser Gln Met  
1085 1090 1095

Arg Asp Leu Gln Leu Gln Cys Glu Ala Asn Val Arg Glu Leu His  
1100 1105 1110

Gln Leu Gln Asn Glu Lys Cys His Leu Leu Val Glu His Glu Thr  
1115 1120 1125

Gln Lys Leu Lys Glu Leu Asp Glu Glu His Ser Gln Glu Leu Lys  
1130 1135 1140

Glu Trp Arg Glu Lys Leu Arg Pro Arg Lys Lys Thr Leu Glu Glu  
1145 1150 1155

Glu Phe Ala Arg Lys Leu Gln Glu Gln Glu Val Phe Phe Lys Met  
1160 1165 1170

Thr Gly Glu Ser Glu Cys Leu Asn Pro Ser Ala Gln Ser Arg Ile  
1175 1180 1185

Ser Lys Phe Tyr Pro Ile Pro Thr Leu His Ser Thr Gly Ser  
1190 1195 1200

<210> 3

<211> 333

<212> PRT

<213> Mus musculus

<400> 3

Met Ser Phe Phe Asn Phe Arg Lys Ile Phe Lys Leu Gly Ser Glu Lys  
1 5 10 15

Lys Lys Lys Gln Tyr Glu His Val Lys Arg Asp Leu Asn Pro Glu Glu  
20 25 30

Phe Trp Glu Ile Ile Gly Glu Leu Gly Asp Gly Ala Phe Gly Lys Val

35	40	45																	
Tyr	Lys	Ala	Gln	Asn	Lys	Glu	Thr	Asn	Val	Leu	Ala	Ala	Ala	Lys	Val				
50						55					60								
Ile	Asp	Thr	Lys	Ser	Glu	Glu	Glu	Leu	Glu	Asp	Tyr	Met	Val	Glu	Ile				
65					70					75					80				
Asp	Ile	Leu	Ala	Ser	Cys	Asp	His	Pro	Asn	Ile	Val	Lys	Leu	Leu	Asp				
				85					90					95					
Ala	Phe	Tyr	Tyr	Glu	Asn	Asn	Leu	Trp	Ile	Leu	Ile	Glu	Phe	Cys	Ala				
			100					105					110						
Gly	Gly	Ala	Val	Asp	Ala	Val	Met	Leu	Glu	Leu	Glu	Arg	Pro	Leu	Thr				
		115					120					125							
Glu	Ser	Gln	Ile	Gln	Val	Val	Cys	Lys	Gln	Thr	Leu	Glu	Ala	Leu	Asn				
	130					135					140								
Tyr	Leu	His	Asp	Asn	Lys	Ile	Ile	His	Arg	Asp	Leu	Lys	Ala	Gly	Asn				
145					150					155					160				
Ile	Leu	Phe	Thr	Leu	Asp	Gly	Asp	Ile	Lys	Leu	Ala	Asp	Phe	Gly	Val				
				165					170					175					
Ser	Ala	Lys	Asn	Thr	Arg	Thr	Ile	Gln	Arg	Arg	Asp	Ser	Phe	Ile	Gly				
			180					185					190						
Thr	Pro	Tyr	Trp	Met	Ala	Pro	Glu	Val	Val	Met	Cys	Glu	Thr	Ser	Lys				
		195					200					205							
Asp	Arg	Pro	Tyr	Asp	Tyr	Lys	Ala	Asp	Val	Trp	Ser	Leu	Gly	Ile	Thr				
	210					215					220								
Leu	Ile	Glu	Met	Ala	Glu	Ile	Glu	Pro	Pro	His	His	Glu	Leu	Asn	Pro				
225					230					235				240					
Met	Arg	Val	Leu	Leu	Lys	Ile	Ala	Lys	Ser	Glu	Pro	Pro	Thr	Leu	Ala				
				245					250					255					
Gln	Pro	Ser	Lys	Trp	Ser	Ser	Asn	Phe	Lys	Asp	Phe	Leu	Arg	Lys	Cys				
			260					265					270						
Leu	Glu	Lys	Asn	Val	Asp	Ala	Arg	Trp	Thr	Thr	Ser	Gln	Leu	Leu	Gln				
		275					280					285							

His Pro Phe Val Thr Val Asp Ser Asn Lys Pro Val Arg Glu Leu Ile  
290 295 300

Ala Glu Ala Lys Ala Glu Val Thr Glu Glu Val Glu Asp Gly Lys Glu  
305 310 315 320

Glu Asp Glu Glu Glu Glu Ala Glu Asn Ala Leu Pro Ile  
325 330

<210> 4

<211> 333

<212> PRT

<213> Homo sapiens

<400> 4

Met Ser Phe Phe Asn Phe Arg Lys Ile Phe Lys Leu Gly Ser Glu Lys  
1 5 10 15

Lys Lys Lys Gln Tyr Glu His Val Lys Arg Asp Leu Asn Pro Glu Asp  
20 25 30

Phe Trp Glu Ile Ile Gly Glu Leu Gly Asp Gly Ala Phe Gly Lys Val  
35 40 45

Tyr Lys Ala Gln Asn Lys Glu Thr Ser Val Leu Ala Ala Lys Val  
50 55 60

Ile Asp Thr Lys Ser Glu Glu Glu Leu Glu Asp Tyr Met Val Glu Ile  
65 70 75 80

Asp Ile Leu Ala Ser Cys Asp His Pro Asn Ile Val Lys Leu Leu Asp  
85 90 95

Ala Phe Tyr Tyr Glu Asn Asn Leu Trp Ile Leu Ile Glu Phe Cys Ala  
100 105 110

Gly Gly Ala Val Asp Ala Val Met Leu Glu Leu Glu Arg Pro Leu Thr  
115 120 125

Glu Ser Gln Ile Gln Val Val Cys Lys Gln Thr Leu Asp Ala Leu Asn  
130 135 140

Tyr Leu His Asp Asn Lys Ile Ile His Arg Asp Leu Lys Ala Gly Asn  
145 150 155 160

Ile Leu Phe Thr Leu Asp Gly Asp Ile Lys Leu Ala Asp Phe Gly Val  
165 170 175

Ser Ala Lys Asn Thr Arg Thr Ile Gln Arg Arg Asp Ser Phe Ile Gly  
180 185 190

Thr Pro Tyr Trp Met Ala Pro Glu Val Val Met Cys Glu Thr Ser Lys  
195 200 205

Asp Arg Pro Tyr Asp Tyr Lys Ala Asp Val Trp Ser Leu Gly Ile Thr  
210 215 220

Leu Ile Glu Met Ala Glu Ile Glu Pro Pro His His Glu Leu Asn Pro  
225 230 235 240

Met Arg Val Leu Leu Lys Ile Ala Lys Ser Glu Pro Pro Thr Leu Ala  
245 250 255

Gln Pro Ser Arg Trp Ser Ser Asn Phe Lys Asp Phe Leu Lys Lys Cys  
260 265 270

Leu Glu Lys Asn Val Asp Ala Arg Trp Thr Thr Ser Gln Leu Leu Gln  
275 280 285

His Pro Phe Val Thr Val Asp Ser Asn Lys Pro Ile Arg Glu Leu Ile  
290 295 300

Ala Glu Ala Lys Ala Glu Val Thr Glu Glu Val Glu Asp Gly Lys Glu  
305 310 315 320

Glu Asp Glu Glu Glu Glu Thr Glu Asn Ser Leu Pro Ile  
325 330

<210> 5

<211> 335

<212> PRT

<213> Homo sapiens

<400> 5

Met Ala Phe Ala Asn Phe Arg Arg Ile Leu Arg Leu Ser Thr Phe Glu  
1 5 10 15

Lys Arg Lys Ser Arg Glu Tyr Glu His Val Arg Arg Asp Leu Asp Pro  
20 25 30

Asn	Asp	Val	Trp	Glu	Ile	Val	Gly	Glu	Leu	Gly	Asp	Gly	Ala	Phe	Gly
		35					40					45			
Lys	Val	Tyr	Lys	Ala	Lys	Asn	Lys	Glu	Thr	Gly	Ala	Leu	Ala	Ala	Ala
	50					55					60				
Lys	Val	Ile	Glu	Thr	Lys	Ser	Glu	Glu	Glu	Leu	Glu	Asp	Tyr	Ile	Val
65					70					75					80
Glu	Ile	Glu	Ile	Leu	Ala	Thr	Cys	Asp	His	Pro	Tyr	Ile	Val	Lys	Leu
				85					90					95	
Leu	Gly	Ala	Tyr	Tyr	Tyr	Asp	Gly	Lys	Leu	Trp	Ile	Met	Ile	Glu	Phe
			100					105					110		
Cys	Pro	Gly	Gly	Ala	Val	Asp	Ala	Ile	Met	Leu	Glu	Leu	Asp	Arg	Gly
		115					120					125			
Leu	Thr	Glu	Pro	Gln	Ile	Gln	Val	Val	Cys	Arg	Gln	Met	Leu	Glu	Ala
	130					135					140				
Leu	Asn	Phe	Leu	His	Gly	Lys	Arg	Ile	Ile	His	Arg	Asp	Leu	Lys	Ala
145					150					155					160
Gly	Asn	Val	Leu	Met	Thr	Leu	Glu	Gly	Asp	Ile	Arg	Leu	Ala	Asp	Phe
				165					170					175	
Gly	Val	Ser	Ala	Lys	Asn	Leu	Lys	Thr	Leu	Gln	Lys	Arg	Asp	Ser	Phe
			180					185					190		
Ile	Gly	Thr	Pro	Tyr	Trp	Met	Ala	Pro	Glu	Val	Val	Leu	Cys	Glu	Thr
		195					200					205			
Met	Lys	Asp	Ala	Pro	Tyr	Asp	Tyr	Lys	Ala	Asp	Ile	Trp	Ser	Leu	Gly
	210					215					220				
Ile	Thr	Leu	Ile	Glu	Met	Ala	Gln	Ile	Glu	Pro	Pro	His	His	Glu	Leu
225					230					235					240
Asn	Pro	Met	Arg	Val	Leu	Leu	Lys	Ile	Ala	Lys	Ser	Asp	Pro	Pro	Thr
				245					250					255	
Leu	Leu	Thr	Pro	Ser	Lys	Trp	Ser	Val	Glu	Phe	Arg	Asp	Phe	Leu	Lys
			260					265					270		
Ile	Ala	Leu	Asp	Lys	Asn	Pro	Glu	Thr	Arg	Pro	Ser	Ala	Ala	Gln	Leu

275		280		285
Leu Gln His Pro Phe Val Ser Arg Val Thr Ser Asn Lys Ala Leu Arg				
290		295		300
Glu Leu Val Ala Glu Ala Lys Ala Glu Val Met Glu Glu Ile Glu Asp				
305		310		315 320
Gly Arg Glu Asp Gly Glu Glu Glu Asp Ala Val Asp Ala Val Pro				
	325		330	335
<210> 6				
<211> 297				
<212> PRT				
<213> Homo sapiens				
<400> 6				
Met Glu Thr Val Gln Leu Arg Asn Pro Pro Arg Arg Gln Leu Lys Lys				
1	5		10	15
Leu Asp Glu Asp Ser Leu Thr Lys Gln Pro Glu Glu Val Phe Asp Val				
	20		25	30
Leu Glu Lys Leu Gly Glu Gly Ser Tyr Gly Ser Val Tyr Lys Ala Ile				
	35		40	45
His Lys Glu Thr Gly Gln Ile Val Ala Ile Lys Gln Val Pro Val Glu				
	50		55	60
Ser Asp Leu Gln Glu Ile Ile Lys Glu Ile Ser Ile Met Gln Gln Cys				
65		70		75 80
Asp Ser Pro His Val Val Lys Tyr Tyr Gly Ser Tyr Phe Lys Asn Thr				
	85		90	95
Asp Leu Trp Ile Val Met Glu Tyr Cys Gly Ala Gly Ser Val Ser Asp				
	100		105	110
Ile Ile Arg Leu Arg Asn Lys Thr Leu Thr Glu Asp Glu Ile Ala Thr				
	115		120	125
Ile Leu Gln Ser Thr Leu Lys Gly Leu Glu Tyr Leu His Phe Met Arg				
	130		135	140

Lys Ile His Arg Asp Ile Lys Ala Gly Asn Ile Leu Leu Asn Thr Glu  
145 150 155 160

Gly His Ala Lys Leu Ala Asp Phe Gly Val Ala Gly Gln Leu Thr Asp  
165 170 175

Thr Met Ala Lys Arg Asn Thr Val Ile Gly Thr Pro Phe Trp Met Ala  
180 185 190

Pro Glu Val Ile Gln Glu Ile Gly Tyr Asn Cys Val Ala Asp Ile Trp  
195 200 205

Ser Leu Gly Ile Thr Ala Ile Glu Met Ala Glu Gly Lys Arg Pro Tyr  
210 215 220

Ala Asp Ile His Pro Met Arg Ala Ile Phe Met Ile Pro Thr Asn Pro  
225 230 235 240

Pro Pro Thr Phe Arg Lys Pro Glu Leu Trp Ser Asp Asn Phe Thr Asp  
245 250 255

Phe Val Lys Gln Cys Leu Val Lys Ser Pro Glu Gln Arg Ala Thr Ala  
260 265 270

Thr Gln Leu Leu Gln His Pro Phe Val Arg Ser Ala Lys Gly Val Ser  
275 280 285

Ile Leu Arg Asp Leu Ile Asn Glu Ala  
290 295

<210> 7

<211> 873

<212> PRT

<213> Mus musculus

<400> 7

Ala Leu Pro Ile Pro Ala Asn Lys Arg Ala Ser Ser Asp Leu Ser Ile  
1 5 10 15

Ala Ser Ser Glu Glu Asp Lys Leu Ser Gln Asn Ala Cys Ile Leu Glu  
20 25 30

Ser Val Ser Glu Arg Thr Glu Gln Ser Thr Ser Glu Asp Lys Phe Ser  
35 40 45

Asn Lys Ile Leu Asn Glu Lys Pro Thr Thr Asp Gly Pro Glu Lys Ala  
50 55 60

Val Asp Glu His Ala Ser Asp Val Asn Leu Glu Thr Gly Ala Glu Leu  
65 70 75 80

Asn Asp Gln Thr Val Gly Ile His Glu Asn Gly Arg Glu Lys Lys Arg  
85 90 95

Pro Lys Leu Glu Asn Leu Pro Asp Thr Gln Asp Gln Gln Thr Val Asp  
100 105 110

Val Asn Ser Val Ser Glu Glu Asn Glu Asn Asn Arg Val Thr Leu Glu  
115 120 125

Thr Asn Thr Asp Cys Leu Lys Pro Glu Glu Asp Arg Asn Lys Glu Asn  
130 135 140

Gln Glu Thr Leu Glu Ser Lys Leu Ile Gln Ser Glu Glu Ile Asn Asp  
145 150 155 160

Thr His Ile Gln Thr Met Asp Leu Val Ser Gln Glu Thr Gly Glu Lys  
165 170 175

Glu Ala Asp Phe Gln Ala Val Asp Asn Glu Val Gly Leu Thr Lys Glu  
180 185 190

Glu Thr Gln Glu Lys Leu Gly Lys Asp Gly Thr Ala Gln Lys Val Ile  
195 200 205

Thr Ser Asp Arg Ser Ser Glu Val Gly Thr Asp Glu Ala Leu Asp Asp  
210 215 220

Thr Gln Lys Ala Ala Glu Leu Ser Lys Ala Ala Gln Ser Gly Glu Gly  
225 230 235 240

Asp Glu Ala Leu Ala Pro Thr Gln Thr Leu Ala Glu Lys Pro Thr Glu  
245 250 255

Gly Pro Glu Ala Gly Gly Ala Glu Glu Glu Pro Pro Gly Gly Glu Arg  
260 265 270

Val Glu Asp Lys Gln Pro Glu Gln Gln Pro Ala Val Cys Glu Ala Glu  
275 280 285

Gly Gln Leu Thr Ser Thr Ser Glu Thr Thr Arg Ala Thr Leu Glu Gln  
290 295 300



Pro Glu Thr Asp Glu Val Glu Gln Val Ser Glu Ser Asn Ser Ile Glu  
305 310 315 320

Glu Leu Glu Arg Leu Val Val Thr Gly Ala Glu Ala Arg Ala Leu Gly  
325 330 335

Ser Glu Gly Glu Ala Ala Ala Thr Glu Val Asp Leu Glu Arg Lys Glu  
340 345 350

Asn Ala Gln Lys Val Pro Val Lys Ala Glu Ser Gln Ala Pro Ala Ala  
355 360 365

Ser Gln Pro Ser Glu Pro His Pro Val Leu Ile Pro Ser Ile Asn Ile  
370 375 380

Asn Ser Glu Thr Thr Glu Asn Lys Glu Glu Met Gly Ala Leu Pro Lys  
385 390 395 400

Pro Glu Thr Ile Leu Pro Pro Glu Pro Glu His Glu Lys Gly Asn Asp  
405 410 415

Thr Asp Ser Gly Thr Gly Ser Thr Val Glu Asn Ser Ser Gly Asp Leu  
420 425 430

Asn Leu Ser Ile Ser Ser Phe Leu Ser Lys Ala Lys Asp Ser Gly Ser  
435 440 445

Val Ser Leu Gln Glu Thr Arg Arg Gln Lys Lys Thr Leu Lys Lys Thr  
450 455 460

Arg Lys Phe Ile Val Asp Gly Val Glu Val Ser Val Thr Thr Ser Lys  
465 470 475 480

Ile Val Thr Asp Ser Asp Ser Lys Thr Glu Glu Leu Arg Phe Leu Arg  
485 490 495

Arg Gln Glu Leu Arg Glu Leu Arg Leu Leu Gln Lys Glu Glu Gln Arg  
500 505 510

Ala Gln Gln Gln Leu Asn Gly Lys Leu Gln Gln Gln Arg Glu Gln Ile  
515 520 525

Phe Arg Arg Phe Glu Gln Glu Met Leu Ser Lys Lys Arg Gln Tyr Asp  
530 535 540

Gln Glu Ile Glu Asn Leu Glu Lys Gln Gln Lys Gln Thr Ile Glu Arg

545		550		555		560									
Leu	Glu	Gln	Glu	His	Thr	Asn	Arg	Leu	Arg	Asp	Glu	Ala	Lys	Arg	Ile
				565					570					575	
Lys	Gly	Glu	Gln	Glu	Lys	Glu	Leu	Ser	Lys	Phe	Gln	Asn	Val	Leu	Lys
			580					585					590		
Asn	Arg	Lys	Lys	Glu	Glu	Gln	Glu	Phe	Val	Gln	Lys	Gln	Gln	Gln	Glu
		595					600					605			
Leu	Asp	Gly	Ser	Leu	Lys	Lys	Ile	Ile	Gln	Gln	Gln	Lys	Ala	Glu	Leu
	610					615					620				
Ala	Asn	Ile	Glu	Arg	Glu	Cys	Leu	Asn	Asn	Lys	Gln	Gln	Leu	Met	Arg
625					630					635					640
Ala	Arg	Glu	Ala	Ala	Ile	Trp	Glu	Leu	Glu	Glu	Arg	His	Leu	Gln	Glu
				645					650					655	
Lys	His	Gln	Leu	Leu	Lys	Gln	Gln	Leu	Lys	Asp	Gln	Tyr	Phe	Met	Gln
			660					665					670		
Arg	His	Gln	Leu	Leu	Lys	Arg	His	Glu	Lys	Glu	Thr	Glu	Gln	Met	Gln
		675					680					685			
Arg	Tyr	Asn	Gln	Arg	Leu	Ile	Glu	Glu	Leu	Lys	Asn	Arg	Gln	Thr	Gln
	690					695					700				
Glu	Arg	Ala	Arg	Leu	Pro	Lys	Ile	Gln	Arg	Ser	Glu	Ala	Lys	Thr	Arg
705					710					715					720
Met	Ala	Met	Phe	Lys	Lys	Ser	Leu	Arg	Ile	Asn	Ser	Thr	Ala	Thr	Pro
				725					730					735	
Asp	Gln	Asp	Arg	Glu	Lys	Ile	Lys	Gln	Phe	Ala	Ala	Gln	Glu	Glu	Lys
			740					745					750		
Arg	Gln	Lys	Asn	Glu	Arg	Met	Ala	Gln	His	Gln	Lys	His	Glu	Ser	Gln
		755					760					765			
Met	Arg	Asp	Leu	Gln	Leu	Gln	Cys	Glu	Ala	Asn	Val	Arg	Glu	Leu	His
	770					775					780				
Gln	Leu	Gln	Asn	Glu	Lys	Cys	His	Leu	Leu	Val	Glu	His	Glu	Thr	Gln
785					790					795					800

Lys Leu Lys Glu Leu Asp Glu Glu His Ser Gln Glu Leu Lys Glu Trp  
805 810 815

Arg Glu Lys Leu Arg Pro Arg Lys Lys Thr Leu Glu Glu Glu Phe Ala  
820 825 830

Arg Lys Leu Gln Glu Gln Glu Val Phe Phe Lys Met Thr Gly Glu Ser  
835 840 845

Glu Cys Leu Asn Pro Ser Ala Gln Ser Arg Ile Ser Lys Phe Tyr Pro  
850 855 860

Ile Pro Thr Leu His Ser Thr Gly Ser  
865 870

<210> 8

<211> 875

<212> PRT

<213> Rattus norvegicus

<400> 8

Ala Leu Pro Ile Pro Ala Asn Lys Arg Ala Ser Ser Asp Leu Ser Ile  
1 5 10 15

Ala Ser Ser Glu Glu Asp Lys Leu Ser Gln Asn Ala Cys Ile Leu Glu  
20 25 30

Ser Val Ser Glu Arg Thr Glu His Asn Thr Ser Gly Asp Lys Phe Ser  
35 40 45

Asn Lys Val Leu Ser Glu Lys Pro Thr Pro Glu Gly Pro Glu Lys Thr  
50 55 60

Val Asp Val Asp Gly Pro Ala Asn Asp Val Asn Leu Glu Thr Val Ala  
65 70 75 80

Glu Pro Asn Asp Gln Ala Val Gly Phe His Glu Asn Gly Arg Glu Lys  
85 90 95

Lys Arg Pro Gln Leu Glu Ser Gln Pro Asp Thr Glu Asp Gln Gln Thr  
100 105 110

Val Asp Val Asn Leu Val Gly Glu Gly Asn Asp Ser Asn Ile Val Ile  
115 120 125

Leu Glu Thr Asn Thr Asp Cys Leu Lys Pro Glu Glu Asp Arg Asn Glu  
130 135 140

Glu Asn Gln Glu Ile Ile Glu Asn Lys Leu Thr Gln Ser Glu Glu Ile  
145 150 155 160

Lys Asp Ile His Ile Gln Thr Met Asp Leu Val Ser Gln Glu Thr Gly  
165 170 175

Glu Lys Glu Ala Asp Phe Gln Ala Ile Asp Asn Glu Val Gly Phe Thr  
180 185 190

Lys Glu Glu Thr Gln Glu Lys Leu Gly Lys Asp Asp Lys Thr His Lys  
195 200 205

Val Val Ile Ser Asp Ile Thr Ser Glu Val Gly Thr Asp Glu Pro Pro  
210 215 220

Gly Asp Thr Gln Lys Ser Ala Glu Gln Ser Gln Asp Ala Glu Gly Gly  
225 230 235 240

Ala Gly Glu Glu Ala Pro Glu Pro Ala Gln Thr Leu Thr Glu Lys Ala  
245 250 255

Thr Glu Gly Pro Glu Ala His Gly Ala Glu Glu Glu Pro Arg Ser Gly  
260 265 270

Glu Arg Val Glu Asp Lys Gln Leu Glu Gln Gln Ser Ala Val Cys Glu  
275 280 285

Gly Glu Gly Gln Val Thr Ser Thr Ser Glu Ser Thr Arg Ala Thr Thr  
290 295 300

Glu Glu Pro Glu Thr Asp Glu Val Asp Gln Val Ser Glu Ser Asn Ser  
305 310 315 320

Ile Glu Glu Leu Glu Arg Leu Gly Val Thr Gly Ala Glu Glu Gln Ala  
325 330 335

Leu Gly Ser Lys Gly Glu Ala Ala Thr Glu Leu Asp Leu Glu Arg Glu  
340 345 350

Glu Asn Ala Gln Glu Leu Pro Val Lys Ala Glu Pro Gln Ala Pro Ala  
355 360 365

Ala Ser Gln Ala Ser Glu Pro Pro Pro Val Leu Ile Pro Ser Ile Asn  
370 375 380

Ile	His	Ser	Glu	Asn	Thr	Glu	Asn	Lys	Gly	Glu	Met	Gly	Ala	Leu	Pro	
385					390					395					400	
Lys	Pro	Glu	Thr	Ile	Leu	Pro	Pro	Glu	Pro	Glu	Asn	Gly	Lys	Gly	Asn	
				405					410					415		
Asp	Thr	Asp	Ser	Gly	Thr	Gly	Ser	Thr	Val	Glu	Asn	Ser	Ser	Ser	Asp	
			420					425					430			
Leu	Asn	Leu	Ser	Ile	Ser	Ser	Phe	Leu	Ser	Lys	Asp	Ser	Gly	Ser	Val	
		435					440					445				
Ser	Leu	Gln	Glu	Thr	Arg	Arg	Gln	Lys	Lys	Thr	Leu	Lys	Lys	Thr	Arg	
	450					455					460					
Lys	Phe	Ile	Val	Asp	Gly	Val	Glu	Val	Ser	Val	Thr	Thr	Ser	Lys	Ile	
465					470					475					480	
Val	Thr	Asp	Ser	Asp	Ser	Lys	Thr	Glu	Glu	Leu	Arg	Phe	Leu	Arg	Arg	
				485					490					495		
Gln	Glu	Leu	Arg	Glu	Leu	Arg	Leu	Leu	Gln	Lys	Glu	Glu	Gln	Lys	Ala	
			500					505					510			
Gln	Gln	Gln	Leu	Asn	Gly	Lys	Leu	Gln	Gln	Gln	Arg	Glu	Gln	Ile	Phe	
			515				520					525				
Arg	Arg	Phe	Glu	Gln	Glu	Met	Leu	Ser	Lys	Lys	Arg	Gln	Tyr	Asp	Gln	
	530					535					540					
Glu	Ile	Glu	Asn	Leu	Glu	Lys	Gln	Gln	Lys	Gln	Thr	Ile	Glu	Arg	Leu	
545					550					555					560	
Glu	Gln	Glu	His	Thr	Asn	Arg	Leu	Arg	Asp	Glu	Ala	Lys	Arg	Ile	Lys	
				565					570					575		
Gly	Glu	Gln	Glu	Lys	Glu	Leu	Ser	Lys	Phe	Gln	Asn	Met	Leu	Arg	Asn	
			580					585					590			
Arg	Lys	Lys	Glu	Glu	Gln	Glu	Phe	Val	Gln	Lys	Gln	Gln	Gln	Glu	Leu	
		595					600						605			
Asp	Gly	Ala	Leu	Lys	Lys	Ile	Ile	Gln	Gln	Gln	Lys	Ala	Glu	Leu	Ala	
	610					615					620					
Asn	Ile	Glu	Arg	Glu	Cys	Leu	Asn	Asn	Lys	Gln	Gln	Leu	Leu	Arg	Ala	

625		630		635		640
Arg Glu Ala Ala Ile Trp Glu Leu Glu Glu Arg His Leu Gln Glu Lys						
		645		650		655
His Gln Leu Leu Lys Gln Gln Leu Lys Asp Gln Tyr Phe Ile Gln Arg						
		660		665		670
His Gln Leu Leu Lys Arg His Glu Lys Glu Thr Glu Gln Met Gln Arg						
		675		680		685
Tyr Asn Gln Arg Leu Ile Glu Glu Leu Lys Asn Arg Gln Thr Gln Glu						
		690		695		700
Arg Ala Arg Leu Pro Lys Ile Gln Arg Ser Glu Ala Lys Thr Arg Met						
		705		710		715
Ala Met Phe Lys Lys Ser Leu Arg Ile Asn Ser Thr Ala Thr Pro Asp						
		725		730		735
Gln Asp Arg Glu Lys Ile Lys Gln Phe Ala Ala Gln Glu Glu Lys Arg						
		740		745		750
Gln Lys Asn Glu Arg Met Ala Gln His Gln Lys His Glu Ser Gln Met						
		755		760		765
Arg Asp Leu Gln Leu Gln Cys Glu Ala Asn Val Arg Glu Leu His Gln						
		770		775		780
Leu Gln Asn Glu Lys Cys His Leu Leu Val Glu His Glu Thr Gln Lys						
		785		790		795
Leu Lys Glu Leu Asp Glu Glu His Ser Gln Glu Leu Lys Glu Trp Arg						
		805		810		815
Glu Lys Leu Arg Pro Arg Lys Lys Thr Leu Glu Glu Glu Phe Ala Arg						
		820		825		830
Lys Leu Gln Glu Gln Glu Val Phe Phe Lys Met Thr Gly Glu Ser Glu						
		835		840		845
Cys Leu Asn Pro Ser Ala Gln Ser Arg Gly Cys Leu Gln Thr Ser His						
		850		855		860
Pro Ser Ser Thr Arg Ala Pro Ala Trp Ala Gly						
		865		870		875

<210> 9  
<211> 516  
<212> PRT  
<213> Rattus norvegicus

<400> 9

Arg Pro Asn Ser Ser Ala Leu Glu Thr Leu Gly Gly Glu Ala Leu Thr  
1 5 10 15

Asn Gly Gly Leu Glu Leu Pro Ser Ser Val Thr Pro Ser His Ser Lys  
20 25 30

Arg Ala Ser Asp Cys Ser Asn Leu Ser Thr Ser Glu Ser Met Asp Tyr  
35 40 45

Gly Thr Ser Leu Ser Ala Asp Leu Ser Leu Asn Glu Thr Gly Ser Leu  
50 55 60

Ser Leu Lys Gly Ser Lys Leu His Asn Lys Thr Leu Lys Arg Thr Arg  
65 70 75 80

Arg Phe Val Val Asp Gly Val Glu Val Ser Ile Thr Thr Ser Lys Ile  
85 90 95

Ile Ser Glu Asp Glu Lys Lys Asp Glu Glu Met Arg Phe Leu Arg Arg  
100 105 110

Gln Glu Leu Arg Glu Leu Arg Leu Leu Gln Lys Glu Glu His Arg Asn  
115 120 125

Gln Thr Gln Leu Ser Ser Lys His Glu Leu Gln Leu Glu Gln Met His  
130 135 140

Lys Arg Phe Glu Gln Glu Ile Asn Ala Lys Lys Lys Phe Tyr Asp Val  
145 150 155 160

Glu Leu Glu Asn Leu Glu Arg Gln Gln Lys Gln Gln Val Glu Lys Met  
165 170 175

Glu Gln Asp His Ser Val Arg Arg Lys Glu Glu Ala Lys Arg Ile Arg  
180 185 190

Leu Glu Gln Asp Arg Asp Tyr Ala Lys Phe Gln Glu Gln Leu Lys Gln  
195 200 205

Met Lys Lys Glu Val Lys Ser Glu Val Glu Lys Leu Pro Arg Gln Gln  
210 215 220

Arg Lys Glu Ser Met Lys Gln Lys Met Glu Glu His Ser Gln Lys Lys  
225 230 235 240

Gln Arg Leu Asp Arg Asp Phe Val Ala Lys Gln Lys Glu Asp Leu Glu  
245 250 255

Leu Ala Met Arg Lys Leu Thr Thr Glu Asn Arg Arg Glu Ile Cys Asp  
260 265 270

Lys Glu Arg Asp Cys Leu Ser Lys Lys Gln Glu Leu Leu Arg Asp Arg  
275 280 285

Glu Ala Ala Leu Trp Glu Met Glu Glu His Gln Leu Gln Glu Arg His  
290 295 300

Gln Leu Val Lys Gln Gln Leu Lys Asp Gln Tyr Phe Leu Gln Arg His  
305 310 315 320

Asp Leu Leu Arg Lys His Glu Lys Glu Arg Glu Gln Met Gln Arg Tyr  
325 330 335

Asn Gln Arg Met Met Glu Gln Leu Lys Val Arg Gln Gln Gln Glu Lys  
340 345 350

Ala Arg Leu Pro Lys Ile Gln Arg Ser Asp Gly Glu Thr Arg Met Ala  
355 360 365

Met Tyr Lys Lys Ser Leu His Ile Asn Gly Ala Gly Ser Ala Ser Glu  
370 375 380

Gln Arg Glu Lys Ile Lys Gln Phe Ser Gln Gln Glu Glu Lys Arg Gln  
385 390 395 400

Lys Ala Glu Arg Leu Gln Gln Gln Gln Lys His Glu His Gln Met Arg  
405 410 415

Asp Met Val Ala Gln Cys Glu Ser Asn Met Ser Glu Leu Gln Gln Leu  
420 425 430

Gln Asn Glu Lys Cys Tyr Leu Leu Val Glu His Glu Thr Gln Lys Leu  
435 440 445

Lys Ala Leu Asp Glu Ser His Asn Gln Ser Leu Lys Glu Trp Arg Asp  
450 455 460



Lys Leu Arg Pro Arg Lys Lys Ala Leu Glu Glu Asp Leu Asn Gln Lys  
465 470 475 480

Lys Arg Glu Gln Glu Met Phe Phe Lys Leu Ser Glu Glu Ala Glu Pro  
485 490 495

Arg Pro Thr Thr Pro Ser Lys Ala Ser Asn Phe Phe Pro Tyr Ser Ser  
500 505 510

Gly Asp Ala Ser  
515

<210> 10

<211> 637

<212> PRT

<213> Rattus norvegicus

<400> 10

Gly Ala Ser Ser Asp Leu Ser Ile Ala Ser Ser Glu Glu Asp Lys Leu  
1 5 10 15

Ser Gln Asn Ala Cys Ile Leu Glu Ser Val Ser Glu Arg Ile Glu His  
20 25 30

Asn Thr Pro Gly Asp Lys Phe Ser Asn Lys Val Leu Asn Glu Arg Pro  
35 40 45

Thr Thr Asp Glu Pro Gly Lys Ala Leu Lys Gly Val Asn Glu His Met  
50 55 60

Gly Asp Ser Asn Leu Glu Ser Met Ala Glu Leu Ser Asp Gln Thr Val  
65 70 75 80

Gly Ile His Glu His Gly Arg Glu Lys Arg Pro Lys Leu Glu Asn Pro  
85 90 95

Pro Asp Thr Glu Asp Gln Gln Leu Val Asp Ile Asn Ser Val Arg Glu  
100 105 110

Gly Asn Glu Glu Asn Ile Val Thr Leu Glu Met Asn Thr Asn His Val  
115 120 125

Lys Pro Glu Glu Asp Arg Glu Lys Glu Asn Gln Glu Ile Pro Glu Asn

130						135						140					
Lys	Leu	Arg	Gln	Ser	Glu	Glu	Ile	Lys	Asp	Met	Asn	Ile	Gln	Thr	Met		
145					150					155					160		
Asp	Leu	Val	Ser	Gln	Glu	Thr	Gly	Glu	Thr	Glu	Ala	Asp	Phe	Gln	Ala		
				165					170					175			
Val	Asp	Ser	Glu	Val	Gly	Phe	Thr	Lys	Ala	Asp	Gly	Gln	Glu	Lys	Leu		
			180					185					190				
Arg	Lys	Asp	Asp	Asn	Thr	Gln	Lys	Val	Val	Ile	Asn	Asp	Arg	Ile	Ser		
		195					200					205					
Glu	Val	Val	Ala	Asn	Glu	Ala	Leu	Asp	Val	Ala	Glu	Lys	Ala	Ala	Glu		
	210					215					220						
Gly	Ser	Ser	Ile	Lys	Asp	Ala	Gln	Ser	Ala	Asp	Gly	Lys	Glu	Ala	Val		
225					230					235					240		
Glu	Gly	Thr	Gln	Lys	Leu	Thr	Glu	Lys	Pro	Thr	Glu	Gly	Pro	Glu	Ala		
				245					250					255			
Gly	Ser	Ala	Glu	Glu	Glu	Pro	Ser	Ala	Gln	Gly	Arg	Val	Glu	Asn	Lys		
			260					265					270				
Glu	Val	His	Gln	Gln	Ser	Ala	Val	Cys	Glu	Gly	Asp	Gly	Gln	Phe	Ile		
		275					280					285					
Ser	Thr	Ser	Val	Thr	Thr	Gln	Ala	Thr	Pro	Glu	Glu	Pro	Gly	Thr	Asp		
	290					295					300						
Glu	Val	Glu	Gln	Val	Ser	Glu	Ser	His	Ser	Thr	Glu	Glu	Arg	Glu	Pro		
305					310					315					320		
Ser	Pro	Val	Ser	Gly	Gly	Ala	Glu	Glu	Gln	Thr	Pro	Gly	Ser	Glu	Ala		
				325					330					335			
Val	Ala	Ala	Ala	Ala	Glu	Val	Glu	Leu	Glu	Gly	Arg	Glu	Ala	Ala	Gln		
				340				345					350				
Glu	Val	Pro	Val	Lys	Ala	Glu	Pro	Glu	Ala	Pro	Ala	Ala	Ser	Pro	Ser		
		355					360					365					
Asn	Glu	Pro	His	Leu	Ile	Leu	Ile	Pro	Ser	Ile	Asn	Ile	Asn	Ser	Glu		
	370					375					380						

Asn	Thr	Glu	Asn	Lys	Gly	Glu	Leu	Gly	Asp	Leu	Pro	Lys	Thr	Glu	Ser	
385					390					395					400	
Ile	Leu	Pro	Pro	Glu	Pro	Glu	Asn	Glu	Lys	Glu	Asn	Asp	Thr	Asp	Ser	
				405					410					415		
Gly	Thr	Gly	Ser	Thr	Val	Glu	Lys	Ser	Ser	Ser	Asp	Leu	Asn	Leu	Ser	
			420					425						430		
Ile	Ser	Ser	Phe	Leu	Ser	Lys	Thr	Lys	Asp	Ser	Gly	Ser	Met	Ser	Leu	
		435					440					445				
Gln	Glu	Thr	Arg	Arg	Gln	Lys	Lys	Thr	Leu	Lys	Lys	Thr	Arg	Lys	Phe	
	450					455					460					
Ile	Val	Asp	Gly	Val	Glu	Val	Ser	Val	Thr	Thr	Ser	Lys	Ile	Val	Thr	
465					470					475					480	
Asp	Ser	Asp	Ser	Lys	Thr	Glu	Glu	Leu	Arg	Phe	Leu	Arg	Arg	Gln	Glu	
				485					490					495		
Leu	Arg	Glu	Leu	Arg	Phe	Leu	Gln	Lys	Glu	Glu	Gln	Arg	Ala	Gln	Gln	
			500					505					510			
Gln	Leu	Asn	Gly	Lys	Leu	Gln	Gln	Gln	Arg	Glu	Gln	Ile	Phe	Arg	Arg	
		515					520					525				
Phe	Glu	Gln	Glu	Met	Met	Ser	Lys	Lys	Arg	Gln	Tyr	Asp	Gln	Glu	Ile	
	530					535					540					
Glu	Asn	Leu	Glu	Lys	Gln	Gln	Lys	Gln	Thr	Ile	Glu	Arg	Leu	Glu	Gln	
545					550					555					560	
Glu	His	Thr	Asn	Arg	Leu	Arg	Asp	Glu	Ala	Lys	Arg	Ile	Lys	Gly	Glu	
				565					570					575		
Gln	Glu	Lys	Glu	Leu	Ser	Lys	Phe	Gln	Asn	Met	Leu	Arg	Asn	Arg	Lys	
			580					585					590			
Lys	Glu	Glu	Gln	Glu	Phe	Val	Gln	Lys	Gln	Gln	Gln	Glu	Leu	Asp	Gly	
		595					600					605				
Ser	Leu	Lys	Lys	Ile	Ile	Gln	Asn	Arg	Arg	Gln	Ser	Trp	Leu	Ile	Leu	
	610					615					620					
Arg	Glu	Ser	Val	Ile	Thr	Ser	Asn	Ser	Leu	Glu	Leu	Glu				
625					630					635						

<210> 11

<211> 472

<212> PRT

<213> Rattus norvegicus

<400> 11

Met Asp Tyr Gly Thr Ser Leu Ser Ala Asp Leu Ser Leu Asn Lys Glu  
1 5 10 15

Thr Gly Ser Leu Ser Leu Lys Gly Ser Lys Leu His Asn Lys Thr Leu  
20 25 30

Lys Arg Thr Arg Arg Phe Val Val Asp Gly Val Glu Val Ser Ile Thr  
35 40 45

Thr Ser Lys Ile Ile Ser Glu Asp Glu Lys Lys Asp Glu Glu Met Arg  
50 55 60

Phe Leu Arg Arg Gln Glu Leu Arg Glu Leu Arg Leu Leu Gln Lys Glu  
65 70 75 80

Glu His Arg Asn Gln Thr Gln Leu Ser Thr Lys His Glu Leu Gln Leu  
85 90 95

Glu Gln Met His Arg Arg Phe Glu Gln Glu Ile Asn Ala Lys Lys Lys  
100 105 110

Phe Tyr Asp Val Glu Leu Glu Asn Leu Glu Arg Gln Gln Lys Gln Gln  
115 120 125

Val Glu Lys Met Glu Gln Asp His Ser Val Arg Arg Arg Glu Glu Ala  
130 135 140

Lys Arg Ile Arg Leu Glu Gln Asp Arg Asp Tyr Ala Arg Phe Gln Glu  
145 150 155 160

Gln Leu Lys Gln Met Lys Lys Glu Val Lys Asn Glu Val Glu Lys Leu  
165 170 175

Pro Arg Gln Gln Arg Lys Glu Ser Met Lys Gln Lys Met Glu Glu His  
180 185 190

Ala Gln Lys Lys Gln Leu Leu Asp Arg Asp Phe Val Ala Lys Gln Lys  
195 200 205

Glu Asp Leu Glu Leu Ala Met Lys Lys Leu Thr Ala Glu Asn Arg Arg  
 210 215 220  
  
 Glu Ile Cys Asp Lys Glu Arg Asp Cys Leu Asn Lys Lys Gln Glu Leu  
 225 230 235 240  
  
 Leu Arg Asp Arg Glu Ala Ala Leu Trp Glu Met Glu Glu His Gln Leu  
 245 250 255  
  
 Gln Glu Arg His Gln Leu Val Lys Gln Gln Leu Lys Asp Gln Tyr Phe  
 260 265 270  
  
 Leu Gln Arg His Asp Leu Leu Arg Lys His Glu Lys Glu Arg Glu Gln  
 275 280 285  
  
 Met Gln Arg Tyr Asn Gln Arg Met Met Glu Gln Leu Lys Val Arg Gln  
 290 295 300  
  
 Gln Gln Glu Lys Ala Arg Leu Pro Lys Ile Gln Arg Ser Asp Gly Lys  
 305 310 315 320  
  
 Thr Arg Met Ala Met Tyr Lys Lys Ser Leu His Ile Asn Gly Ala Gly  
 325 330 335  
  
 Ser Ala Ser Glu Gln Arg Glu Lys Val Lys Gln Phe Ser Gln Gln Glu  
 340 345 350  
  
 Glu Lys Arg Gln Lys Ala Glu Arg Leu Gln Gln Gln Gln Lys His Glu  
 355 360 365  
  
 Asn Gln Met Arg Asp Met Val Ala Gln Cys Glu Ser Asn Met Asn Glu  
 370 375 380  
  
 Leu Gln Gln Leu Gln Asn Glu Lys Cys His Leu Leu Val Glu His Glu  
 385 390 395 400  
  
 Thr Gln Lys Leu Lys Ala Leu Asp Glu Ser His Asn Gln Ser Leu Lys  
 405 410 415  
  
 Glu Trp Arg Asp Lys Leu Arg Pro Arg Lys Lys Ala Leu Glu Glu Asp  
 420 425 430  
  
 Leu Asn Gln Lys Lys Arg Glu Gln Glu Met Phe Phe Arg Leu Ser Glu  
 435 440 445  
  
 Glu Ala Glu Thr Arg Pro Thr Thr Pro Asn Arg Ala Ser Lys Phe Phe

450

455

460

Pro Tyr Ser Ser Gly Asp Ala Ser  
465 470